THE CLAIMS

What is claimed is:

1. A method comprising:

    comparing a first connection index of a current thread of execution with a second

    connection index of a previous thread of execution; and

    performing a CRC calculation using a CRC residue produced for the previous thread

    if the current thread of execution and the previous thread of execution share the same

    connection index.

2. The method of Claim 1 wherein the CRC residue produced for the previous thread is the

    most recently produced CRC residue.

3. The method of Claim 2 wherein the CRC calculation is performed without the current

    thread of execution providing any CRC residue to a centralized CRC unit.

4. An article of manufacture comprising

    a machine-accessible medium including data that, when accessed by a machine,

    cause the machine to perform the method of Claim 2.

5. The method of Claim 1 wherein the CRC residue produced for the previous thread is

    associated with a preceding sequential cell of the same packet as the current thread.

6. The method of Claim 1 wherein the CRC residue produced for the previous thread is stored in a content addressable memory.

7. The method of Claim 5 wherein the current thread of execution provides the first connection index to access the content addressable memory.

8. The method of Claim 5 wherein a hit in the content addressable memory indicates that a corresponding CRC residue associated with the first connection index resulted from a preceding sequential cell of the same packet as the current thread.

9. An article of manufacture comprising

a machine-accessible medium including data that, when accessed by a machine, cause the machine to perform the method of Claim 8.

10. An article of manufacture comprising a machine-accessible medium including data that, when accessed by a machine, cause the machine to:

associate a current thread of execution with a first connection index for a first connection;

identify a first CRC residue stored for the first connection; and

initiate a CRC calculation for the first connection using, instead of the first CRC residue, a second CRC residue produced for a previous thread if the previous thread of execution is also associated with the first connection index.

11. The article of manufacture of Claim 10 further including data that, when accessed by the machine, cause the machine to:

initiate the CRC calculation for the first connection using the first CRC residue if the previous thread of execution is not associated with the first connection index.

12. The article of manufacture of Claim 11 further including data that, when accessed by the machine, cause the machine to:

provide the first CRC residue to a centralized CRC circuit.

13. The article of manufacture of Claim 10 wherein the CRC calculation is initiated without the current thread of execution providing the first or second CRC residues to a centralized CRC circuit.

14. The article of manufacture of Claim 10 further including data that, when accessed by the machine, cause the machine to:

store the first connection index in a thread connection array.

15. An article of manufacture comprising a machine-accessible medium including data that, when accessed by a machine, cause the machine to:

associate a current thread of execution with a first connection index for a first connection;

provide the first connection index to a centralized CRC circuit to identify a CRC residue stored for a previous thread of execution; and

initiate a CRC calculation for the first connection using the CRC residue stored for the previous thread of execution if the previous thread of execution is also associated with the first connection index.

16. The article of manufacture of Claim 16 wherein the CRC residue is stored for the previous thread of execution in a content addressable memory and is accessible by the centralized CRC circuit using the first connection index.

17. An apparatus comprising:

a memory interface to access a first data and a second data from a memory;

a CRC circuit coupled with the memory interface to perform CRC calculations on data from the memory and to produce CRC residues;

an instruction storage to store instructions of a first thread of execution associated with a first connection index and a second thread of execution associated with a second connection index; and

an execution circuit coupled with the CRC circuit to execute the first thread of execution and the second thread of execution, said execution circuit to request the CRC circuit to perform a first CRC calculation on the first data and to produce a first CRC residue responsive to executing the first thread of execution, and said execution circuit, responsive to executing the second thread of execution, to compare the first connection index with the second connection index and to request the CRC circuit to perform a second CRC calculation on the second data using the first CRC residue when the first connection index is equal to the second connection index.

18. The apparatus of Claim 17 wherein said memory is a FIFO buffer.

19. The apparatus of Claim 17 wherein said memory is SDRAM.

20. The apparatus of Claim 17 wherein said execution circuit, responsive to executing the second thread of execution, is further to retrieve a second CRC residue from a connection table and to request the CRC circuit to perform the second CRC calculation on the second data using the second CRC residue when the first connection index is not equal to the second connection index.

21. The apparatus of Claim 17 wherein said execution circuit, responsive to executing the second thread of execution, is further to store the second connection index in a thread connection array and retrieve the first connection index from the thread connection array.

22. An apparatus comprising:

a memory interface to access a first data and a second data from a memory;

a CRC circuit coupled with the memory interface to perform CRC calculations on data from the memory and to produce CRC residues;

an instruction storage to store instructions of a first thread of execution associated with a first connection index and a second thread of execution associated with a second connection index;

a content addressable memory coupled with the CRC circuit to store CRC residues addressable by the first connection index and the second connection index; and

an execution circuit coupled with the CRC circuit to execute the first thread of execution and the second thread of execution, said execution circuit to request the CRC circuit to perform a first CRC calculation on the first data and to produce a first CRC residue responsive to executing the first thread of execution, and said execution circuit, responsive to executing the second thread of execution, to provide the second connection index to the CRC circuit and to request the CRC circuit to perform a second CRC calculation on the second data using the first CRC residue when the second connection index addresses the first CRC residue in the content addressable memory.

23. The apparatus of Claim 22 wherein said execution circuit, responsive to executing the second thread of execution, is further to retrieve a second CRC residue from a connection table and to request the CRC circuit to perform the second CRC calculation on the second data using the second CRC residue when the second connection index does not address the first CRC residue in the content addressable memory.

24. A system comprising:

one or more network interface devices;

a network bus interface to buffer data received by or to be transmitted by said one or more network interface devices;

a memory to store the data;

a memory interface to access a first data and a second data from the memory;

a CRC circuit coupled with the memory interface to perform CRC calculations on data accessed from the memory and to produce CRC residues;

an instruction storage to store instructions of a first thread of execution associated with a first connection index and a second thread of execution associated with a second connection index; and

an execution circuit coupled with the CRC circuit to execute the first thread of execution and the second thread of execution, said execution circuit to request the CRC circuit to perform a first CRC calculation on the first data, storing in the CRC circuit a first CRC residue responsive to executing the first thread of execution, and said execution circuit to request the CRC circuit to perform a second CRC calculation on the second data using the stored CRC residue, responsive to executing the second thread of execution, when the first connection index is equal to the second connection index.

25. The system of Claim 24 wherein said execution circuit, responsive to executing the second thread of execution, is further to compare the first connection index with the second connection index and to retrieve a second CRC residue from a connection table and to request the CRC circuit to perform the second CRC calculation on the second data using the second CRC residue when the first connection index is not equal to the second connection index.

26. The system of Claim 24 wherein said CRC circuit includes a residue storage addressable by connection indices to store CRC residues.

27. The system of Claim 26 wherein said execution circuit, responsive to executing the second thread of execution, is further to retrieve a second CRC residue from a

connection table and to request the CRC circuit to perform the second CRC calculation

on the second data using the second CRC residue when the second connection index

does not address the first CRC residue in the residue storage.